

REMARKS

Claims 8 and 12 have been amended to incorporate therein the recitations of claims 10 and 13, respectively, to recite that the fluorine-containing elastomer is a perfluoroelastomer. Claims 10, 13 and 15 have been canceled.

Review and reconsideration on the merits are requested.

Claims 8, 9 and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by RU 2164524 C1 (RU '524) as evidenced by U.S. Patent 5,482,695 to Guschin et al. Claims 12 and 14 were also rejected under 35 U.S.C. § 102(b) as being anticipated by RU '524 as evidenced by Guschin et al. Claim 15 was rejected under 35 U.S.C. § 102(b) as being anticipated by Guschin et al.

RU '524 (Abstract) was recited as disclosing a rubber mix comprising a fluorine-containing elastomer and impact detonation diamond graphite for use as a coating. The Examiner relied on Guschin et al as disclosing that the size of the diamond after detonation is from 40-120 Å.

In response, independent claims 8 and 12 have been amended to incorporate therein the recitation of claims 10 and 13, respectively, to thereby obviate the foregoing rejections. Withdrawal is respectfully requested.

Claims 10 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over RU '524 as evidenced by Guschin et al, further in view of Drobny "Technology of Fluoropolymers," 2001, CRC Press, pp. 103-104. Drobny was cited as teaching that perfluoroelastomers are useful as coatings or sealants. Because RU '524 and Drobny are said to be analogous art concerned with the same field of endeavor, namely, fluoroelastomeric materials for coatings, the Examiner

considered that it would have been obvious to substitute a fluorine-containing elastomer of RU '524 with a perfluoroelastomer of Drobny. As motivation for combining the cited references, the Examiner further cites Drobny as suggesting that perfluoroelastomers are particularly suited for extreme service conditions.

Applicants traverse, and respectfully request the Examiner to reconsider for the following reasons.

The Present Invention:

Claim 8 (as amended to incorporate therein the recitation of claim 10) relates to a sealing material (technical feature (i)) comprising a fluorine-containing elastomer composition comprising a perfluoroelastomer (technical feature (ii)) and a crystalline carbon allotrope having an average primary particle size of at most 0.1 μm (technical feature (iii)).

Amended claim 12 relates to a fluorine-containing elastomer composition (technical feature (iv)) comprising a perfluoroelastomer (technical feature (ii)) and a diamond having an average primary particle size of at most 0.1 μm (technical feature (v)).

According to the present inventions having these technical features (i) to (iii) for claim 8, and (ii), (iv) and (v) for claim 10, remarkable effects such as little weight change for all the treatments of NF_3 plasma, O_2 plasma and CF_4 plasma carried out in a process of manufacturing a semiconductor and prominent plasma resistance are obtained (see page 2, line 25 to page 3, line 5 of the specification).

Response to Rejection Under § 103(a):

The invention of claim 8 is clearly distinguished from RU '524 in view of the above-identified technical features (i) and (ii).

RU '524 only discloses a rubber mix which is used for antifriction metal and rubber coatings. There is no disclosure of a sealing material (technical feature (i)). Further, as described above, the technical feature (ii) of claim 10 has been incorporated into Claim 8.

The invention of claim 12 is also clearly distinguished from RU '524 in view of the above-identified technical feature (ii) of claim 13 as incorporated into claim 12.

As discussed above, the disclosure of RU '524 is only directed to coatings. Therefore, it would be quite difficult for a person skilled in the art to obtain a sealing material such as an O-ring from the coating of RU '524.

Turning to combination of RU '524 and Drobny, Drobny only discloses molded perfluoroelastomer articles which can generally be used for a sealing material such as an O-ring. There is no disclosure or suggestion of employing a crystalline carbon allotrope having a specific average primary particle size with a perfluoroelastomer to obtain the marked effects such as little weight change for all the treatments of NF_3 plasma, O_2 plasma and CF_4 plasma carried out in a process of manufacturing a semiconductor, especially a process of chemical vapor deposition (CVD). RU '524 also does not disclose employing a crystalline carbon allotrope having a specific average primary particle size together with a perfluoroelastomer to obtain such marked effects.

Therefore, it is not easy for a person skilled in the art to achieve the construction of claim 8 from RU '524 and Drobny.

The same is applicable to claim 12. Both RU '524 and Drobny do not disclose or suggest employing a diamond having a specific average primary particle size together with perfluoroelastomer to obtain such marked effects.

Therefore, it is also not easy for a person skilled in the art to achieve the construction of claim 12 from RU '524 and Drobny.

For the above reasons alone, it is respectfully submitted that the amended claims are patentable over the cited prior art.

As mentioned above, Drobny was cited as teaching that perfluoroelastomers are useful as coatings or sealants. The Examiner considered that it would have been obvious to substitute a fluorine-containing elastomer of RU '524 with a perfluoroelastomer of Drobny. However, such combination, even with the appropriate motivation, would provide a modified coating of RU '524 different from the sealing material of claim 8. Further, there is no apparent reason which would lead one of ordinary skill to employ the impact detonation diamond graphite of the coating of RU '524 in a sealant of Drobny. Perhaps one might include impact detonation diamond graphite in a coating of Drobny, but this is different from the invention of claim 8 which is directed to a sealing material. For these additional reasons, it is respectfully submitted that claims 8, 9 and 11 are separately patentable over the cited prior art.

Withdrawal of the foregoing rejection under 35 U.S.C. § 103(a) and allowance of claims 8, 9, 11, 12 and 14 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

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Respectfully submitted,



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